



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/698,276

10/31/2003

Karen J. Smiley

ABDT-0578/B030100

1636

23377

7590

02/23/2006

WOODCOCK WASHBURN LLP
ONE LIBERTY PLACE, 46TH FLOOR
1650 MARKET STREET
PHILADELPHIA, PA 19103

EXAMINER

TSAI, CAROL S W

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,276

Applicant(s)

SMILEY ET AL.

Examiner

Carol S. Tsai

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 13-17 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 2-12 and 18-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 13, 17, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 3,667,034 to Freeze in view of U. S. Patent No. 5,938,424 to Kurogi et al.

With respect to claims 1 and 17, Freeze disclose a method for transformer testing, comprising: receiving a failing test result of a transformer, the test result being determined from a test taken during transformer manufacture (see col. 1, lines 11-31 and lines 34-62; col. 3, lines 36-46; and col. 5, line 65 to col. 6, line 6);

Freeze disclose providing a tank circuit using the winding to be tested as part of the tank circuit, and tuning the tank circuit using the winding to be tested to resonance, wherein the resonant frequency, and maximum voltage across the tank circuit at resonance, being used to determine if there are faults in the winding (see Abstract, lines 3-6).

Freeze does not disclose determining, via a knowledge-based system, a predicted root cause of the failure based on the test result and a knowledge base of transformer information;

Art Unit: 2857

and determining, via the knowledge-based system, a suggested course of action for the failure based on the test result and the knowledge base of transformer information.

Kurogi et al. teach determining, via a knowledge-based system, a predicted root cause of the failure based on the test result and a knowledge base of transformer information (see col. 2, lines 12-51 and col. 6, line 22 to col. 7, line 42); and determining, via the knowledge-based system, a suggested course of action for the failure based on the test result and the knowledge base of transformer information (see col. 2, lines 26-31 and col. 3, lines 33-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze's method to include determining, via a knowledge-based system, a predicted root cause of the failure based on the test result and a knowledge base of transformer information; and determining, via the knowledge-based system, a suggested course of action for the failure based on the test result and the knowledge base of transformer information, as taught by Kurogi et al., because the diagnosis knowledge base for use in diagnosing failures is constructed of the knowledge of skilled inspectors as gathered and organized in order and therefore affords diagnosis results with high reliability (see col. 13, lines 61-64).

As to claims 13 and 29, Freeze does not disclose a prediction that a piece of transformer manufacturing equipment is out of calibration.

Kurogi et al. teach a prediction that a piece of transformer manufacturing equipment is out of calibration (see col. 5, line 51 to col. 6, line 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze's method to include a prediction that a piece of

Art Unit: 2857

transformer manufacturing equipment is out of calibration, as taught by Kurogi et al., in order that the degrees of abnormality can be calculated to determine the causes of failures.

4. Claims 14-16 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeze in view of Kurogi et al. as applied to claims 1 and 17 above, and further in view of U. S. Patent No. 6,369,582 to Coffeen.

As noted above, Freeze in combination with Kurogi et al. teach all the features of the claimed invention, but do not disclose modifying a scheduled transformer manufacturing step to compensate for the test failure.

Coffeen teaches modifying a scheduled transformer manufacturing step to compensate for the test failure (see col. 4, line 63 to col. 5, line 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze in combination with Kurogi et al.'s method to include modifying a scheduled transformer manufacturing step to compensate for the test failure, as taught by Coffeen, in order that a maintenance can be scheduled for the transformer.

As to claims 15 and 31, Freeze in combination with Kurogi et al. do not disclose redoing a previously completed transformer manufacturing step.

Coffeen teaches redoing a previously completed transformer manufacturing step (see col. 16, lines 21-26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze in combination with Kurogi et al.'s method to include

Art Unit: 2857

redoing a previously completed transformer manufacturing step, as taught by Coffeen, in order that a suitable output pulse or signal can be detected (see Coffeen, col. 16, lines 25-26).

As to claims 16 and 32, Freeze in combination with Kurogi et al. do not disclose recalibrating a piece of transformer manufacturing equipment and redoing a previously completed transformer manufacturing step.

Coffeen teaches recalibrating a piece of transformer manufacturing equipment (see col. 4, line 63 to col. 5, line 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze in combination with Kurogi et al.'s method to include recalibrating a piece of transformer manufacturing equipment, as taught by Coffeen, in order that a maintenance can be scheduled for the transformer.

Coffeen teaches redoing a previously completed transformer manufacturing step (see col. 16, lines 21-26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Freeze in combination with Kurogi et al.'s method to include redoing a previously completed transformer manufacturing step, as taught by Coffeen, in order that a suitable output pulse or signal can be detected (see Coffeen, col. 16, lines 25-26).

Allowable Subject Matter

5. Claims 2-12 and 18-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed January 6, 2006 have been fully considered but they are not persuasive.

Applicants argued that “Accordingly, diagnosis data as to the cause of a particular failure can be obtained by driving the diagnosis knowledge base with reference to items of measurement data. The diagnosis data is quantitative, and directly represents the cause of the failure or includes suggestions as the true cause of the failure. Kurogi spec. At col. 2, lines 26-31” and “The apparatus of the invention for diagnosing failures in the combustion system automatically affords, based on measurement data representing the behavior of the combustion system, quantitative diagnosis data which directly represents the cause of failure, or includes suggestions as to the true cause of failure, consequently enabling even inspectors of small experience to readily identify the cause. *Id.*, at col. 3, lines 33-39” are silent regarding determining, via the knowledge-based system, a suggested course of action for the failure based on the test result and the knowledge base of transformer information. The Examiner disagrees with Applicants. As set forth above in the art rejection, Freeze discloses the claimed invention except for determining, via the knowledge-based system, a suggested course of action for the failure based on the test result and the knowledge base of transformer information. Kurogi et al. teach determining, via the knowledge-based system (diagnosis knowledge base 7 shown on Fig. 1), a suggested course of action for the failure based on the test result (see col. 2, lines 26-31; diagnosis data as to the cause of a particular failure can be obtained by driving the diagnosis knowledge base with reference to items of measurement data. The diagnosis data is quantitative, and directly represents the cause of the failure or includes suggestions as

Art Unit: 2857

the true cause of the failure) and the knowledge base of transformer information (see Figs. 1 and 7; col. 3, lines 55-56; and col. 5, lines 19-; **FIG. 1 is a block diagram showing the construction of a failure diagnosing apparatus embodying the invention; FIG. 7 is a diagram showing details of a diagnosis knowledge base as to an ignition transformer line**), because the diagnosis knowledge base for use in diagnosing failures is constructed of the knowledge of skilled inspectors as gathered and organized in order and therefore affords diagnosis results with high reliability (see col. 13, lines 61-64).

In addition, “**The transformer fact data may include information representative of a plurality of built transformers, the built transformer information comprising a design specification for each built transformer, measured test results for each built transformer, as-built information for each built transformer, and/or built transformer manufacture information**” as described at page 3, lines 1-4, applicants clearly indicates that test result is measurement data for each built transform. “**As to the ignition transformer primary current or the flame current, current values sampled suitably are averaged to obtain measurement data. The combustion system shown in FIG. 2 are divided into four lines, i.e., the ignition transformer line, spark rod line, pilot burner line and main burner line. Examples of failure diagnosis apparatus 9 as adapted for the respective lines will be described below. Ignition Transformer Line The combustion system control unit 1 feeds the following measurement data to an abnormality degree calculating circuit 2. Spark detection time (measurement data a) ... Flame current produced with ignition trial timing (measurement data d)**” as described at page 5, lines 20-50 and Figures 1 and 7 depicted, Kurogi et al. clearly indicate that test result is measurement data obtained for the transformer information to be used

Art Unit: 2857

in diagnosing failures via a diagnosis knowledge base. Therefore, Freeze in combination with Kurogi et al. clearly teach the claimed invention.

FIG.1

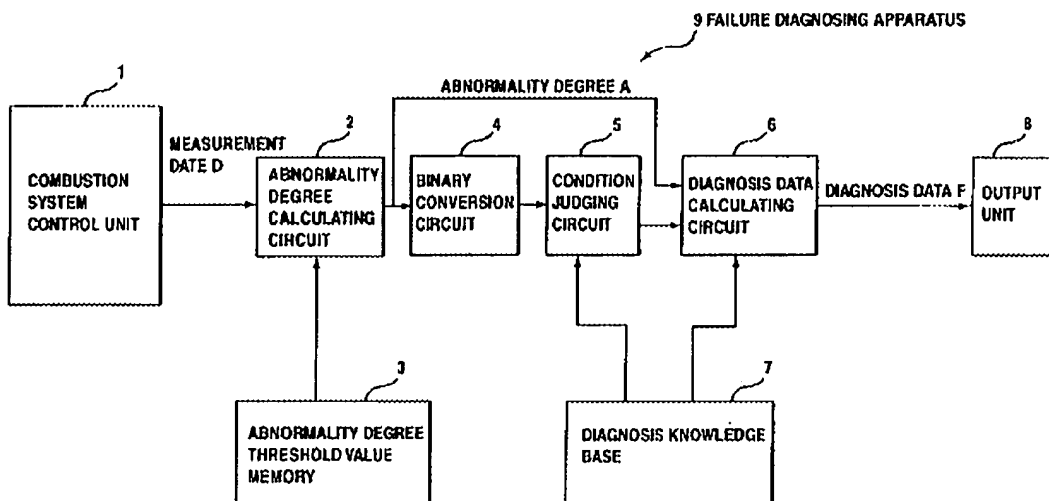
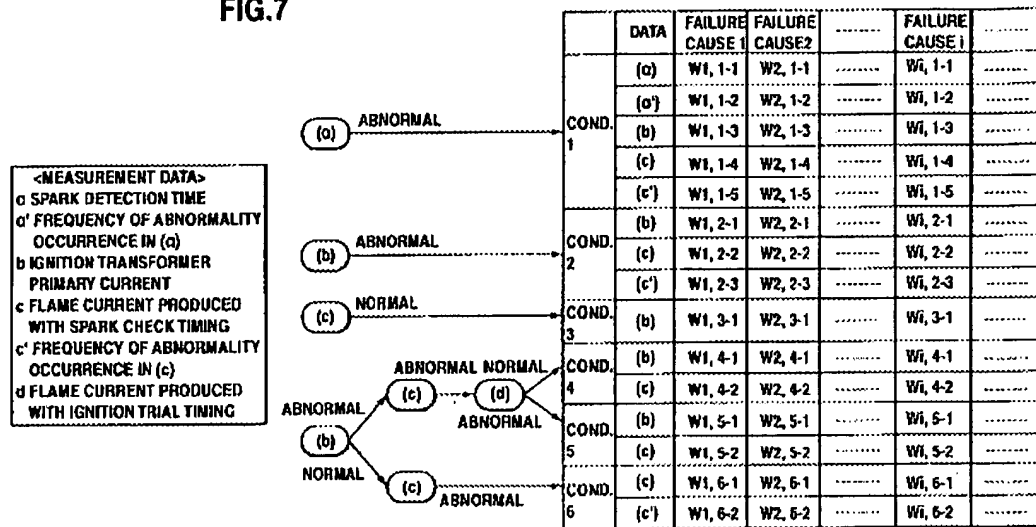


FIG. 7



Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2857

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224.

The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).

cswt
February 21, 2006
Art Unit 2857



CAROL S.W. TSAI
PRIMARY EXAMINER